BTEC Assignment Brief

Qualification	Pearson BTEC International Level 3 Extended Diploma in Health and Social Care (Health Studies)
Unit number and title	**Unit 21: Biomedical Science**
Learning aims	Learning aim A: Understand the ways in which the body defends itself against infection Learning aim B: Examine the principles of blood transfusion science and its importance to those working in haematology Learning aim C: Investigate the importance of cell pathology as a diagnostic tool Learning aim D: Explore how the chemical make-up of the body influences health and disease
Assignment title	Biomedical scientists - supporting doctors
Assessor	
Issue date	
Hand in deadline	

Vocational Scenario or Context	You have recently attended a talk by the blood transfusion service encouraging you to become a blood donor. This has interested you and you have decided to investigate why blood is so important in preventing disease and what can go wrong. You then decide to look at how else your body can protect itself and how cell pathology and chemical makeup can be tested to diagnose and monitor diseases.

Task 1	You have discussed your interest with your tutor who has asked you to produce a report on the defence mechanisms of the body. This will form part of your assessment for your qualification in health and social care. This report will justify the prominent role of haematology as both a diagnostic tool and in transfusion processes. You will assess the effectiveness of specific, non-specific and inflammatory processes in helping the body defend itself against infection. Your report will include the clinical uses of blood products and the reasons for screening them before use and an analysis of the effectiveness of the screening processes in preventing the transmission of blood-born infections. You must ensure your justification and assessment covers the following: ● an explanation of the specific and non-specific defence methods of the human body ● a description of the components of human blood that refers to their structure and function ● an explanation, referring to the blood components, that covers the diseases are associated with them

	● a description of the diagnostic techniques used in haematology ● an explanation of the processes involved in producing safe blood products for transfusion.
Checklist of evidence required	A report on the defence mechanisms of the human body.
Criteria covered by this task:	
Criteria reference	To achieve the criteria you must show that you are able to:
AB.D1	Justify the prominent role of haematology as a diagnostic tool and in the transfusion processes.
A.M1	Assess the effectiveness of specific, non-specific and inflammatory processes in helping the body defend itself against infection.
B.M2	Discuss the clinical uses of blood products and the reasons for screening them before use.
B.M3	Analyse the effectiveness of the screening processes in preventing the transmission of blood-born infections.
A.P1	Explain the specific and non-specific defence methods of the human body.
B.P2	Describe the components of human blood by referring to their structure and functions.
B.P3	Explain, by referring to the blood components, what diseases are associated with them.
B.P4	Describe the diagnostic techniques used in haematology.
B.P5	Explain the processes involved in producing safe blood products for transfusion.
Task 2	You need to produce a report on how biochemical and pathology tests are used to identify and measure diseases in the human body. Your report will evaluate how the results of cell pathology used in conjunction with biochemical investigations can be used as diagnostic tools and evaluate the work done by laboratories into effectively diagnosing the causes and cures of diseases. Your report will also: ● analyse how cell pathology is used in disease identification and discuss the importance of balanced biochemical systems in the human body ● explain the cause of cell injury, two biochemical systems and two biochemical tests use in monitoring the biochemistry of the human body.
Checklist of evidence required	A report, based on individual research, on how biochemical and pathology tests are used to identify and measure diseases in the human body.
Criteria covered by this task:	
Criteria reference	To achieve the criteria you must show that you are able to:

CD.D2	Evaluate how the results of cell pathology used in conjunction with biochemical investigations can be used as diagnostic tools.
CD.D3	Evaluate the work done by laboratories into effectively diagnosing the causes and cures of diseases.
C.M4	Analyse how cell pathology is used in disease identification.
D.M5	Discuss the importance of balanced biochemical systems in the human body.
C.P6	Explain the causes of cell injury.
D.P7	Explain two of the biochemistry systems in the human body.
D.P8	Explain two biochemical tests used in monitoring the biochemistry of the human body.

Sources of information to support you with this Assignment	**Book** Witchell H — *Writing for Biomedical Sciences Students* (Red Globe Press, 2020) ISBN 9781352008753 **Websites** https://www.dnalc.org/view/1005-Diagnosis-Pathology.html https://journals.sagepub.com/doi/abs/10.1177/1099800417716542
Other assessment materials attached to this Assignment Brief	N/A